National Institute of Environmental Health Sciences

Catastrophic flood and forest cover change in the Huong river basin, central Viet Nam: A gap between common perceptions and facts

Author(s): Tran P, Marincioni F, Shaw R
Year: 2010
Journal: Journal of Environmental Management. 91 (11): 2186-2200

Abstract:

Recent catastrophic floods in Viet Nam have been increasingly linked to land use and forest cover change in the uplands. Despite the doubts that many scientists have expressed on such nexus, this common view prompted both positive forest protection/reforestation programs and often-unwarranted blame on upland communities for their forest management practices. This study discusses the disparity between public perceptions and scientific evidences relating the causes of catastrophic floods. The former was drawn on the results of a questionnaire and focus groups discussions with key informants of different mountainous communities, whereas the latter was based on GIS and remote sensing analysis of land cover change, including a statistical analysis of hydro-meteorological data of the Huong river basin in Viet Nam. Results indicate that there is a gap between the common beliefs and the actual relationship between the forest cover change and catastrophic floods. Undeniably, the studied areas showed significant changes in land cover over the period 1989-2008, yet, 71% of the variance of catastrophic flood level in the downstream areas appeared related to variance in rainfall. Evidences from this study showed that the overall increasing trends of catastrophic flooding in the Huong river basin was mainly due to climate variability and to the development of main roads and dyke infrastructures in the lowlands. Forest management policies and programs, shaped on the common assumption that forest degradation in the upland is the main cause of catastrophic flood in the downstream areas, should be reassessed to avoid unnecessary strain on upland people.

Source: http://dx.doi.org/10.1016/j.jenvman.2010.05.020

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Public

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event

Extreme Weather Event: Flooding

Geographic Feature:

resource focuses on specific type of geography

Freshwater

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Vietnam

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content